

RESULT 1  
 AAQ99824/c  
 ID AAQ99824 standard; cDNA; 10 BP.  
 XX  
 AC AAQ99824;  
 XX  
 DT 06-MAR-1996 (first entry)  
 XX  
 DE Loblolly pine fusiform rust disease resistance marker OPC6 primer.  
 XX  
 KW Loblolly pine; Pinus taeda; fusiform rust disease; resistance marker;  
 KW Cronartium quercum f.sp. fusiforme; Cqf; RAPD genetic marker;  
 KW random amplified polymorphic DNA analysis; woody perennial plant;  
 KW family selection; pedigree; mapping; primer; ss.  
 XX  
 OS Synthetic.  
 XX  
 PN W09519697-A1.  
 XX  
 PD 27-JUL-1995.  
 XX  
 PF 19-JAN-1995; 95WO-US00677.  
 XX  
 PR 21-JAN-1994; 94US-0184567.  
 XX  
 PA (UYNC-) UNIV NORTH CAROLINA STATE.  
 XX  
 PI Grattapaglia D, O'Malley DM, Sederoff RR;  
 XX  
 DR WPI; 1995-269212/35.  
 XX  
 PT Determn. of heritable oligogenic traits in woody plants by genomic

100% Seq Identity

to seq 16

Application

09/530663

Box A

Tue Jul 30 09:10:31 2002

us-09-53

PT mapping of multiple markers in a two generation plant family - used  
 XX to select plants with desired characteristics for breeding.  
 XX

PS Example 5; Page 31; 103pp; English.  
 XX

CC RAPD analysis was used to study resistance to particular strains of  
 CC Cronartium quercuum f.sp. fusiforme (Cqf), the causative agent of  
 CC fusiform rust disease, in loblolly pine (Pinus taeda). A putative  
 CC heterozygous mother tree (clone 10-5) and two open pollinated  
 CC daughters (half-sib clones 152-231 and 152-257) were crossed to a  
 CC highly susceptible pollen parent. Progeny were challenged with  
 CC inoculum from various aeciospore lines. It was found that the  
 CC marker amplified by the 10-mer primer in AAQ99824 was predictive of  
 CC resistance to inoculation with single Aeciospore line 2-36 in  
 CC clone 152-231 progeny. These and other results showed that resistance  
 CC to fusiform rust disease in loblolly pine is under oligogenic  
 CC control which can be mapped using genetic markers, using only a  
 CC two-generation pedigree.  
 XX

SQ Sequence 10 BP; 3 A; 3 C; 3 G; 1 T; 0 other;

Query Match 100.0%; Score 6; DB 16; Length 10;  
 Best Local Similarity 100.0%; Pred. No. 1.1e+05;  
 Matches 6; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 ccgttc 6  
 |||||  
 Db 6 CCGTTC 1



## DEMANDE INTERNATIONALE PUBLIÉE EN VERTU DU TRAITE DE COOPERATION EN MATIERE DE BREVETS (PCT)

|   |                             |  |    |          |                             |    |          |                        |    |   |
|---|-----------------------------|--|----|----------|-----------------------------|----|----------|------------------------|----|---|
| (51) Classification internationale des brevets <sup>6</sup> :<br><b>C12N 15/53, 15/82, 5/10, A01H 5/00</b>  | <b>A3</b>                   | (11) Numéro de publication internationale: <b>WO 96/38567</b><br><br>(43) Date de publication internationale: 5 décembre 1996 (05.12.96) |    |          |                             |    |          |                        |    |   |
| <p>(21) Numéro de la demande internationale: PCT/FR96/00831</p> <p>(22) Date de dépôt international: 3 juin 1996 (03.06.96)</p> <p>(30) Données relatives à la priorité:</p> <table border="0"> <tr> <td>95/06800</td> <td>2 juin 1995 (02.06.95)</td> <td>FR</td> </tr> <tr> <td>95/13570</td> <td>10 novembre 1995 (10.11.95)</td> <td>FR</td> </tr> <tr> <td>96/05944</td> <td>17 mai 1996 (17.05.96)</td> <td>FR</td> </tr> </table> <p>(71) Déposant (pour tous les Etats désignés sauf US): RHONE-POULENC AGROCHIMIE [FR/FR]; 14-20, rue Pierre-Baizet, F-69009 Lyon (FR).</p> <p>(72) Inventeurs; et</p> <p>(75) Inventeurs/Déposants (US seulement): SAILLAND, Alain [FR/FR]; 38, rue Ernest-Fabrigue, F-69009 Lyon (FR). ROLLAND, Anne [FR/FR]; 41, rue Louis-Bouquet, F-69009 Lyon (FR). MATRINGE, Michel [FR/FR]; 5, chemin de Montpellas, F-69009 Lyon (FR). PALLETT, Ken [GB/GB]; Ongar, Essex CM5 0HW (GB).</p> <p>(74) Mandataire: CHRETIEN, François; Rhône-Poulenc Agrochimie, 14-20, rue Pierre-Baizet, F-69009 Lyon (FR).</p>  | 95/06800                    | 2 juin 1995 (02.06.95)   | FR | 95/13570 | 10 novembre 1995 (10.11.95) | FR | 96/05944 | 17 mai 1996 (17.05.96) | FR | <p>(81) Etats désignés: AL, AU, BB, BG, BR, CA, CN, CZ, EE, GE, HU, IL, IS, JP, KP, KR, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TR, TT, UA, US, UZ, VN, brevet ARIPO (KE, LS, MW, SD, SZ, UG), brevet eurasien (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), brevet européen (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), brevet OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p><b>Publiée</b><br/>Avec rapport de recherche internationale.<br/>Avant l'expiration du délai prévu pour la modification des revendications, sera republiée si de telles modifications sont reçues.</p> <p>(88) Date de publication du rapport de recherche internationale: 22 mai 1997 (22.05.97)</p> |
| 95/06800  | 2 juin 1995 (02.06.95)      | FR   |    |          |                             |    |          |                        |    |   |
| 95/13570  | 10 novembre 1995 (10.11.95) | FR   |    |          |                             |    |          |                        |    |   |
| 96/05944  | 17 mai 1996 (17.05.96)      | FR   |    |          |                             |    |          |                        |    |   |
| <p>(54) Title: DNA SEQUENCE OF A GENE OF HYDROXY-PHENYL PYRUVATE DIOXYGENASE AND PRODUCTION OF PLANTS CONTAINING A GENE OF HYDROXY-PHENYL PYRUVATE DIOXYGENASE AND WHICH ARE TOLERANT TO CERTAIN HERBICIDES</p> <p>(54) Titre: SEQUENCE ADN D'UN GENE DE L'HYDROXY-PHENYL PYRUVATE DIOXYGENASE ET OBTENTION DE PLANTES CONTENANT UN GENE DE L'HYDROXY-PHENYL PYRUVATE DIOXYGENASE, TOLERANTES A CERTAINS HERBICIDES</p> <p>(57) Abstract</p> <p>DNA sequence of a gene of hydroxy-phenyl pyruvate dioxygenase and production of plants containing a gene of hydroxy-phenyl pyruvate dioxygenase and which are resistant to herbicides. DNA sequence of a gene of hydroxy-phenyl pyruvate dioxygenase; isolation from a bacteria or a plant; utilization for obtaining plants tolerant to herbicides.</p> <p>(57) Abrégé</p> <p>Séquence ADN d'un gène de l'hydroxy-phényl pyruvate dioxygénase et obtention de plantes contenant un gène de l'hydroxy-phényl pyruvate dioxygénase, résistantes aux herbicides. Séquence ADN d'un gène de l'hydroxy-phényl pyruvate dioxygénase; isolement à partir d'une bactérie ou d'une plante; utilisation pour l'obtention de plantes tolérantes aux herbicides.</p> |                             |  |    |          |                             |    |          |                        |    |   |



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

|  |           |   |
|--|-----------|---|
| <b>(51) International Patent Classification 5 :</b><br><b>C12N 15/54, 15/82, 15/11</b><br><b>C12N 5/10</b>   | <b>A1</b> | <b>(11) International Publication Number:</b> <b>WO 93/05160</b><br><b>(43) International Publication Date:</b> 18 March 1993 (18.03.93)  |
| <b>(21) International Application Number:</b> PCT/GB92/01640<br><b>(22) International Filing Date:</b> 9 September 1992 (09.09.92)<br><b>(30) Priority data:</b><br>9119279.9 10 September 1991 (10.09.91) GB<br><b>(71) Applicant (for all designated States except US):</b> IMPERIAL<br>CHEMICAL INDUSTRIES-PLC [GB/GB]; Imperial<br>Chemical House, Millbank, London SW1P 3JF (GB).<br><b>(72) Inventors; and</b><br><b>(75) Inventors/Applicants (for US only) :</b> VAN DOORSSELA-<br>ERE, Jan [BE/BE]; Laboratorium voor Genetica/Labor-<br>atoire d'associé d'INRA, K.L. Ledeganchstr 35, B-9000<br>Gent (BE). FRITIG, Gernard, Jean, Meinrad [FR/FR];<br>6, rue du Hohwald, F-67460 Souffelweyersheim (FR).<br>INZE, Dirk, Gustaaf [BE/BE]; Dries Straat 18, B-9310<br>Aalst (BE). JOUANIN, Lise [FR/FR]; Laboratoire de<br>Biologie Cellulaire, INRA, Route Saint-Cyr, F-78026<br>Versailles Cédex (FR). KNIGHT, Mary, Elizabeth [GB/<br>GB]; 14 Greenfinch Close, Heathlake Park, Crowthorne,<br>Berkshire RG11 6TZ (GB). VAN MONTAGU, Marc<br>[BE/BE]; Laboratorium voor Genetica, K.L. Lede-<br>ganchstr 35, B-9000 Gent (BE). LEGRAND, Michel<br>[BE/BE]; Laboratorium voor Genetica/Laboratoire d'as-<br>socié d'INRA, K.L. Ledeganchstr 35, B-9000 Gent (BE). |           | <b>(74) Agent:</b> HUSKISSON, Frank, Mackie; Imperial Chemical<br>Industries plc, ICI Group Patent Department, P.O. Box<br>6, Bessemer Road, Welwyn Garden City, Herts AL7<br>1HD (GB).<br><b>(81) Designated States:</b> AU, BB, BG, BR, CA, CS, FI, HU, JP,<br>KP, KR, LK, MG, MN, MW, NO, PL, RO, RU, SD,<br>US, European patent (AT, BE, CH, DE, DK, ES, FR,<br>GB, GR, IE, IT, LU, MC, NL, SE), OAPI patent (BF,<br>BJ, CF, CG, CI, CM, GA, GN, ML, MR, SN, TD, TG).<br><b>Published</b><br><i>With international search report.</i> |
| <b>(54) Title:</b> MODIFICATION OF LIGNIN SYNTHESIS IN PLANTS<br><br><b>(57) Abstract</b><br><p>The biosynthesis of lignin in plants is regulated by insertion into the plant genome by altering the plant's ability to synthesize the enzyme O-methyl-transferase, an enzyme involved in the lignin biosynthetic pathway. Production of O-methyl-transferase may be enhanced by insertion into the plant genome by transformation of one or more additional copies of the O-methyl-transferase gene or production may be inhibited by insertion of a gene encoding anti-sense mRNA directed against the mRNA encoded by the endogenous O-methyl-transferase gene.</p>   |           |   |